DEPARTMENT OF FOREST SCIENCE
THE UNIVERSITY OF ALBERTA
EDMONTON, Alberta

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ESTABLISHMENT REPORT

Lodgepole Pine Provenance Trials

Whitehorse, Yukon

June 1974

by

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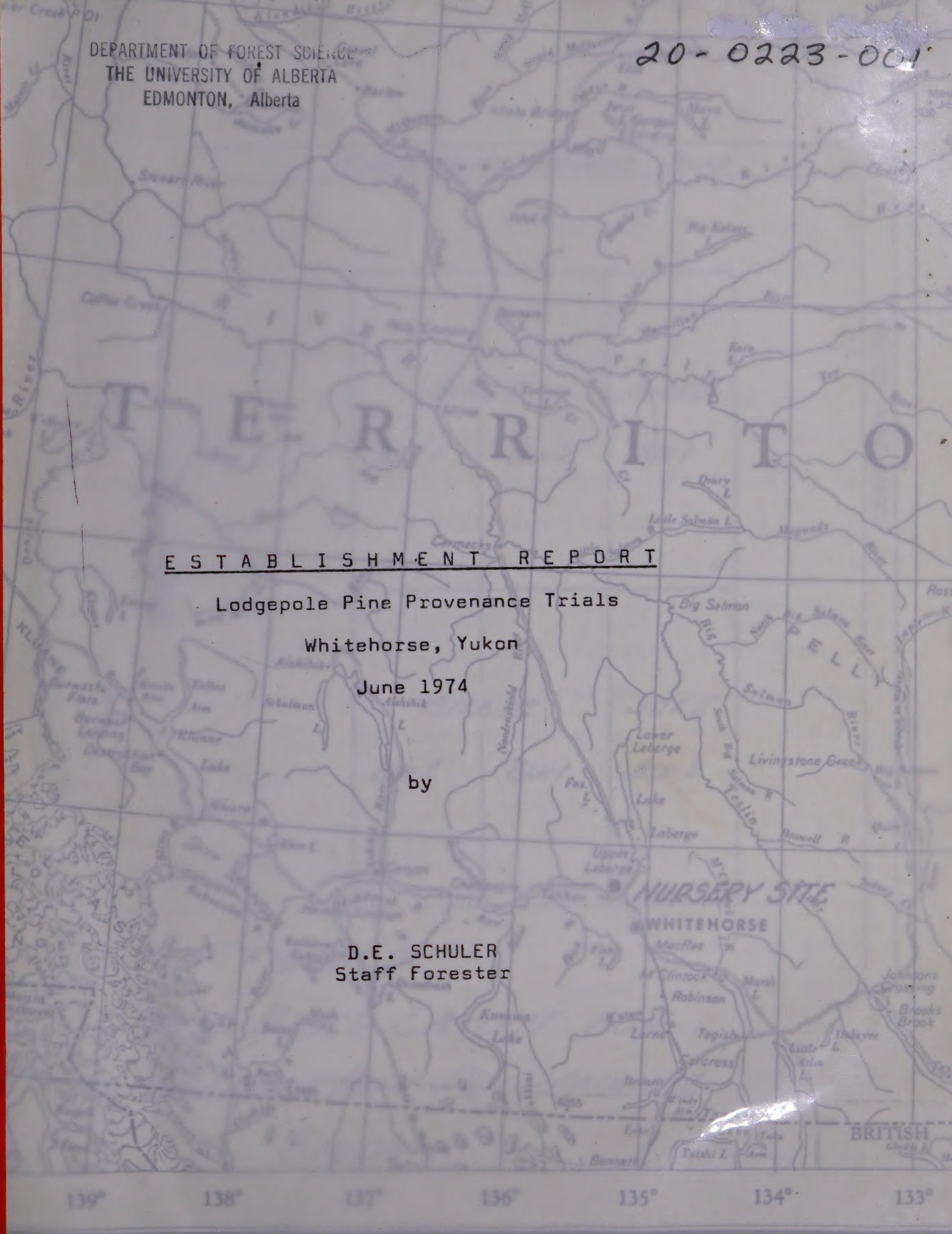
Staff Forester



CINITY MAP (FIG 1)

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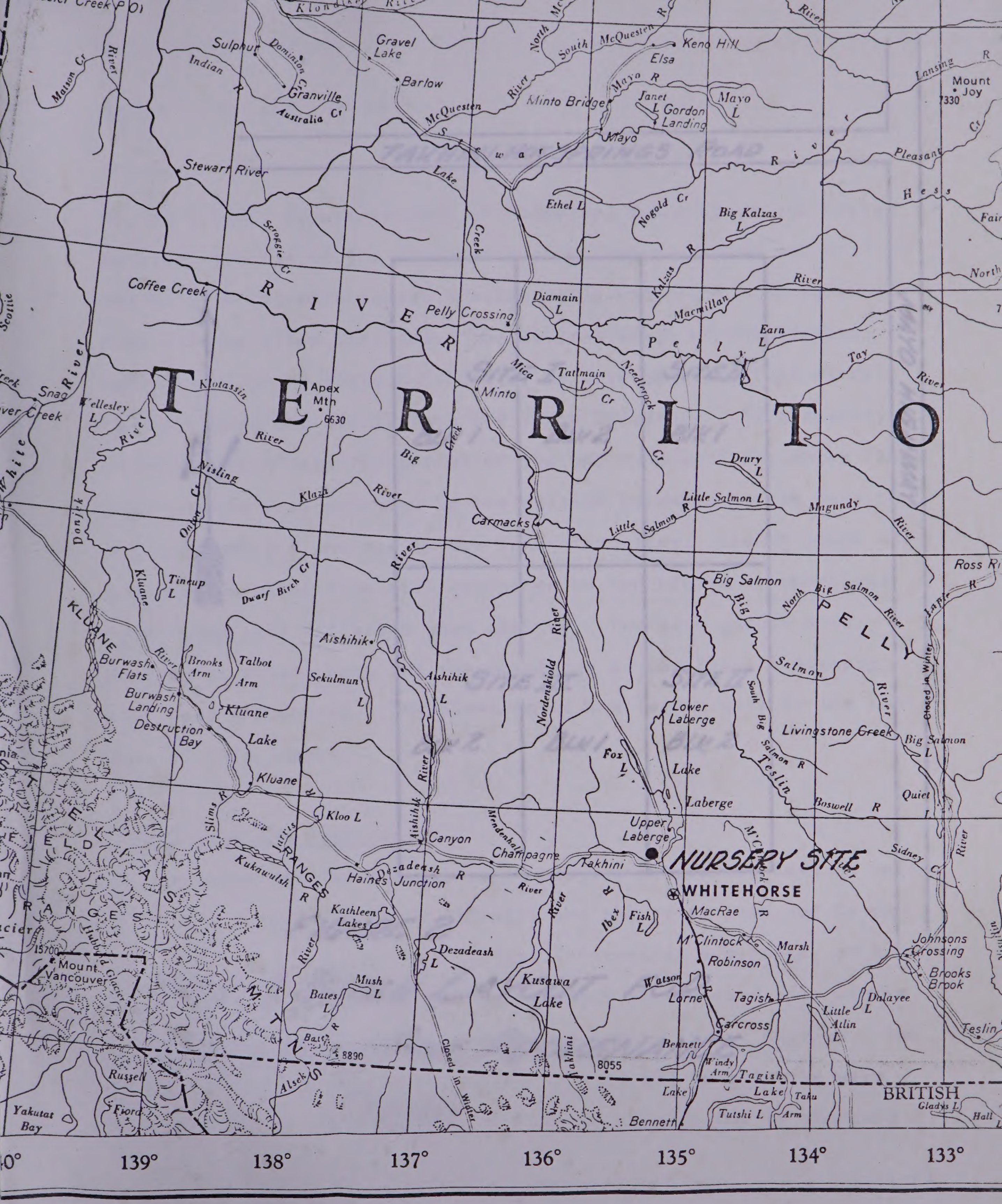

VICINITY MAP (FIG. 1)

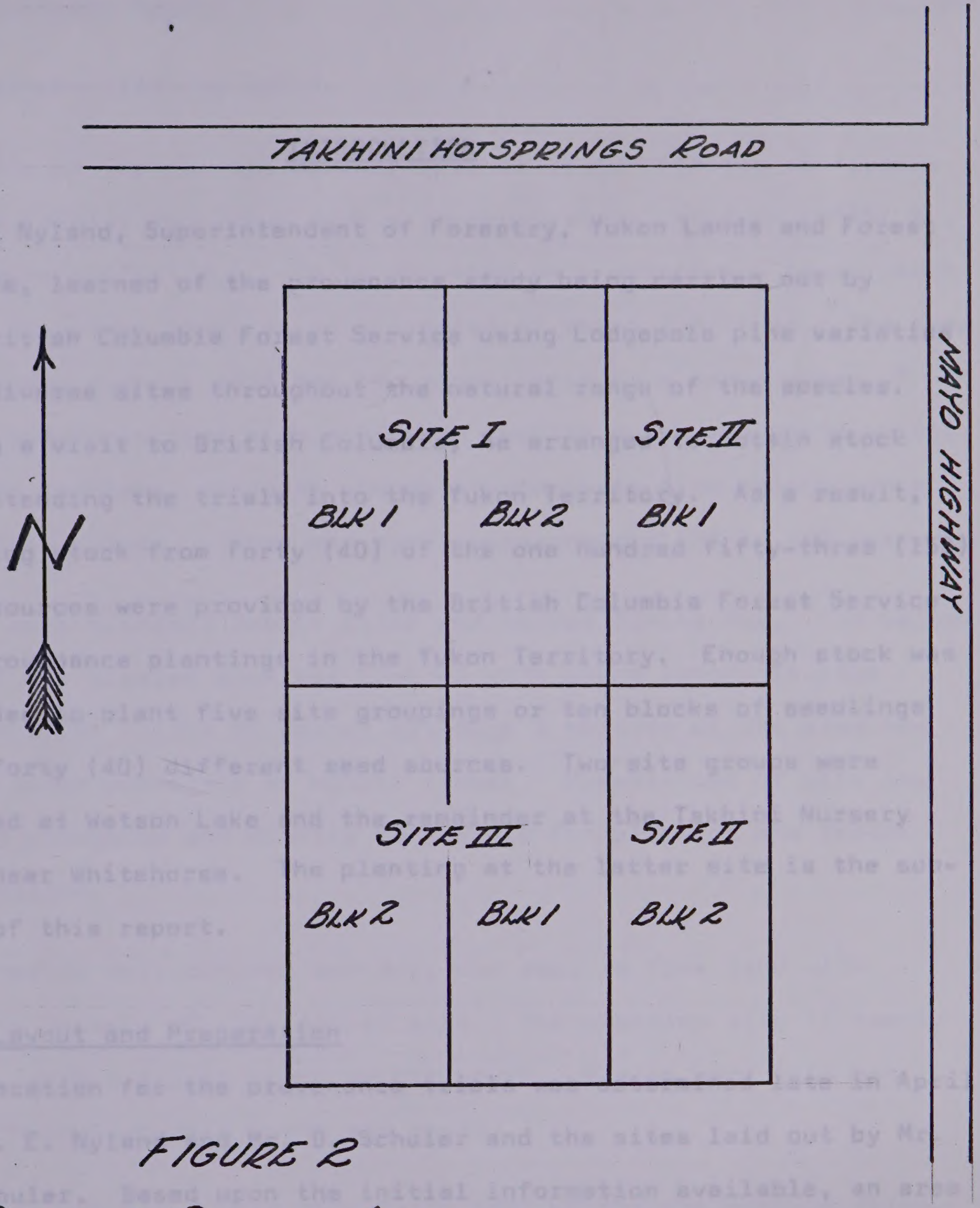

FIGURE 2

SITE & BLOCK LAYOUT FOR LODGEPOLE PINE PROVENANCE STUDY

INTRODUCTION

Mr. E. Nyland, Superintendent of Forestry, Yukon Lands and Forest Service, learned of the provenance study being carried out by the British Columbia Forest Service using Lodgepole pine varieties from diverse sites throughout the natural range of the species. During a visit to British Columbia, he arranged to obtain stock for extending the trials into the Yukon Territory. As a result, planting stock from forty (40) of the one hundred fifty-three (153) seed sources were provided by the British Columbia Forest Service for provenance plantings in the Yukon Territory. Enough stock was provided to plant five site groupings or ten blocks of seedlings from forty (40) different seed sources. Two site groups were planted at Watson Lake and the remainder at the Takhini Nursery site near Whitehorse. The planting at the latter site is the subject of this report.

Site Layout and Preparation

The location for the provenance trials was determined late in April by Mr. E. Nyland and Mr. D. Schuler and the sites laid out by Mr. D. Schuler. Based upon the initial information available, an area of approximately seven acres was laid out in standard size blocks described by K. Illingworth, British Columbia Forest Service. Two 300 foot by 500 foot areas and 150 foot by 500 foot tracts were laid out for clearing, or enough area to provide for 10 standard

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size blocks (144' by 240').

The site of the planned nursery (Figure 1) is near the confluence of the Takhini and Yukon Rivers (approximately Latitude 60°48' N., Longitude 135°11' W.). It is situated on a relatively level bench above the river level at an elevation of about 2175 feet. The area was burned over in 1958 and has regenerated to a dense stand of young Lodgepole pine with scattered quaking aspen and white spruce. In some portions, residual stands of lodgepole pine remain where the fire skipped. These are aged approximately 120 to 140 years.

Sites were cleared, debris piled and burned during May. The majority of the cleared area was covered with young lodgepole pine regeneration (circa 20 years) although a portion of the area had a scattered overstory of mature timber. Preparation of site included ploughing and discing to prepare for planting and reduce competition.

The area is well drained and dry, the soil is fine sand with varying amounts of clay and/or silt. The planting site is nearly level, with a slight slope to the south. Blocks were laid out with their long axis north and south.

After it was known that only forty (40) of the one hundred fifty-three (153) sources would be set out in the Territory and after the decision to locate a portion of the trials in Watson Lake, the layout was adjusted. It was determined that one of the 300 foot by 500 foot sites would accommodate the stock if the blocks were altered to be four plots wide rather than six. Therefore,

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the trials were laid out in blocks four plots by ten plots, allowing one complete set of forty (40) sources to be planted in each block. Numbering follows the same system set forth by K. Illingsworth (1), however, no allowance was made in the sequence for the missing tiers of plots. Plots were laid out using temporary stakes, permanent stakes will be installed as soon as available.

Planting

The planting stock was transported from Red Rock Nursery via auto freight, arriving in Whitehorse the evening of May 27. The trees arrived in reasonably good condition despite not being transported in a refrigerated van or otherwise receiving special care in transit. However, a high percentage of the trees had broken dormancy and had well developed "candles". Stock was stored in a cool, well ventilated storage building until planted.

The planting operation was supervised by Dale Wilcox and Don Schuler. Trees were carefully planted one plot at a time using shovels. Transplants were watered during planting and will be watered at approximately weekly intervals throughout the first summer. The planting crew consisted of Ralph McGreal, forman, Gerald Steele, Richard Sawrenko, Philip Hopcraft, Brenda McManus, Pat McIntyre and Wendy McGreal. Planting commenced May 30 and was completed June 3.

References

1) Illingsworth, K., Working Plan: Lodgepole Pine Provenance Trials, 1974 (E.P. 657.06), B.C. Forest Service.

2) Sziklai, Oscar, Progress Report on Plus Tree Selection of *Pinus contorta* (SCA-65-7700), Faculty of Forestry, U.B.C.1970.

TABLE 1

LODGEPOLE PINE PROVENANCE STUDY

Random Number Plot Layout by Provenance Number

PLOT NO.	SITE I		SITE II		SITE III	
	BLOCK 1	BLOCK 2	BLOCK 1	BLOCK 2	BLOCK 1	BLOCK 2
1	103	32	25	19	36	29
2	28	94	66	92	92	36
3	33	21	33	39	99	98
4	89	106	34	97	33	28
5	65	90	64	26	90	26
6	141	19	65	35	96	105
7	27	65	36	102	103	99
8	39	28	106	24	141	97
9	35	163	93	34	66	40
10	93	27	141	99	38	96
11	62	38	97	37	24	64
12	94	24	89	38	21	89
13	98	103	142	64	26	32
14	99	97	91	88	64	66
15	92	89	62	66	98	93
16	97	34	24	62	28	91
17	37	26	21	90	39	33
18	24	98	28	105	29	65
19	21	36	26	65	27	141
20	91	102	99	91	32	37
21	29	62	38	29	93	19
22	26	92	19	36	19	25
23	101	96	39	32	34	94
24	64	37	88	40	35	21
25	102	141	90	96	62	27
26	90	64	98	94	91	35
27	32	33	94	142	40	62
28	88	40	163	98	37	34
29	34	29	37	101	25	38
30	36	35	32	25	89	24

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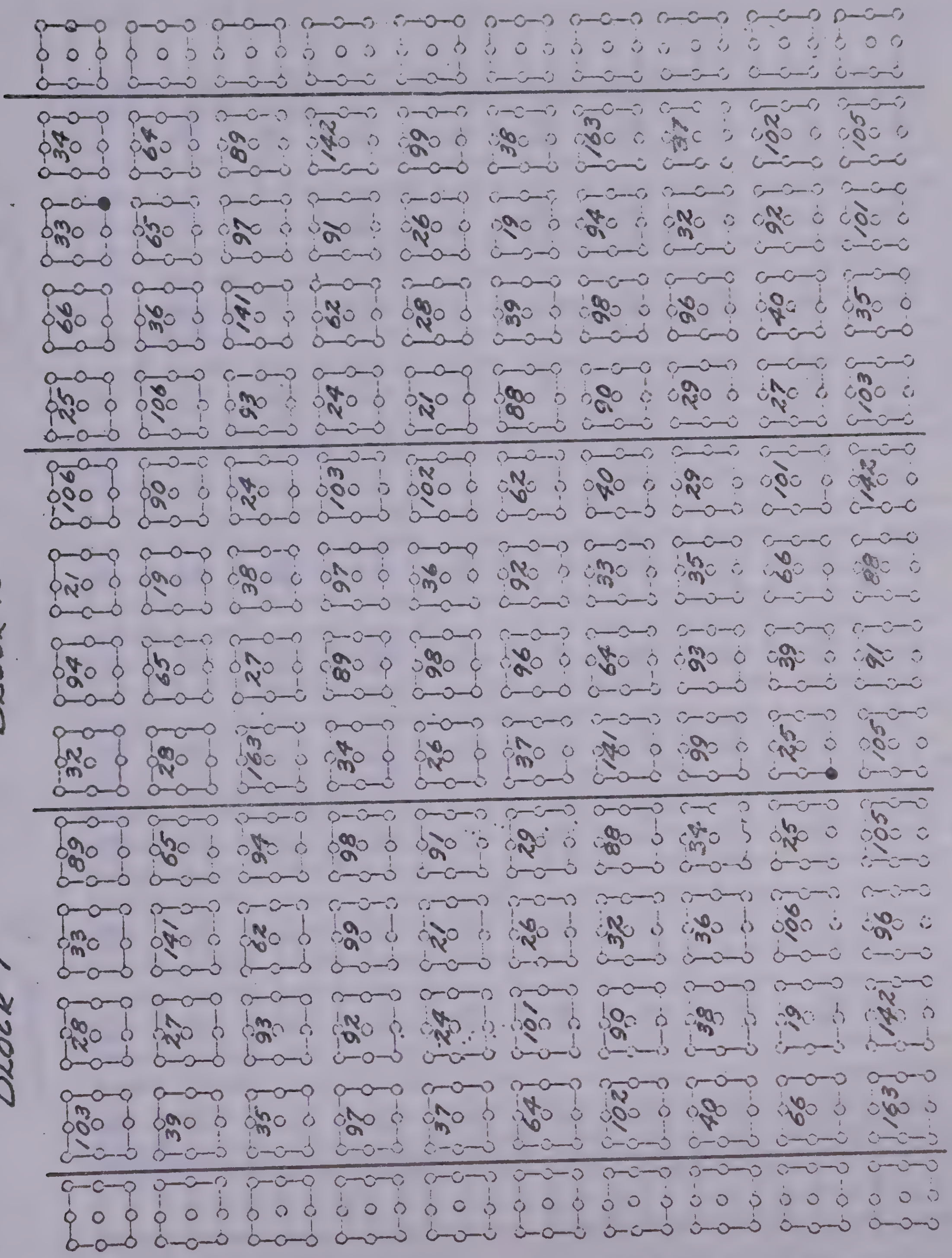
PLOT NO.	SITE I		SITE II		SITE III	
	BLOCK 1	BLOCK 2	BLOCK 1	BLOCK 2	BLOCK 1	BLOCK 2
31	38	93	96	89	97	103
32	40	99	29	93	142	92
33	69	25	27	106	88	142
34	19	39	40	27	94	88
35	106	66	92	21	105	106
36	25	101	102	141	106	101
37	105	142	105	28	102	102
38	96	88	101	103	163	90
39	142	91	35	163	101	163
40	163	105	103	33	65	39

REGION No. ____ Name. *WHITEHORSE, Y.T.*

SITE No. ____ Name. *TAKHINI*

BLOCK No. ____ Date ________ Name ____________

North Arrow



SITE II BLOCK 1	34	64	89	142	99	38	163	37	102	105
	33	65	97	91	26	19	94	32	92	101
	66	36	141	62	28	39	98	96	40	35
	25	106	93	24	21	88	90	29	27	103
SITE I BLOCK 2	106	90	24	103	102	62	40	29	101	142
	21	19	38	97	36	92	33	35	66	88
	94	65	27	89	98	96	64	93	39	91
	32	28	163	34	26	37	141	99	25	105
SITE I BLOCK 1	89	65	94	98	91	29	88	34	25	105
	33	141	62	99	21	26	32	36	106	96
	28	27	93	92	24	101	90	38	19	142
	103	39	35	97	37	64	102	40	66	163

REMARKS *SITE I BLK 1 PLANTED 4 JUNE 1974 CLOUDY & COOL*

BLK 2 PLANTED 5 JUNE 1974 COOL & WINDY, BROKEN CLOUD

SITE II BLK 1 PLANTED 3 JUNE 1974 COOL & CLOUDY

NOTE: FILLED CIRCLES (●) INDICATE TREES MISSING FROM PLANTING STR

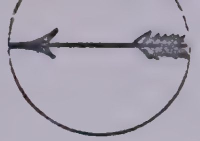
FIG. 3a

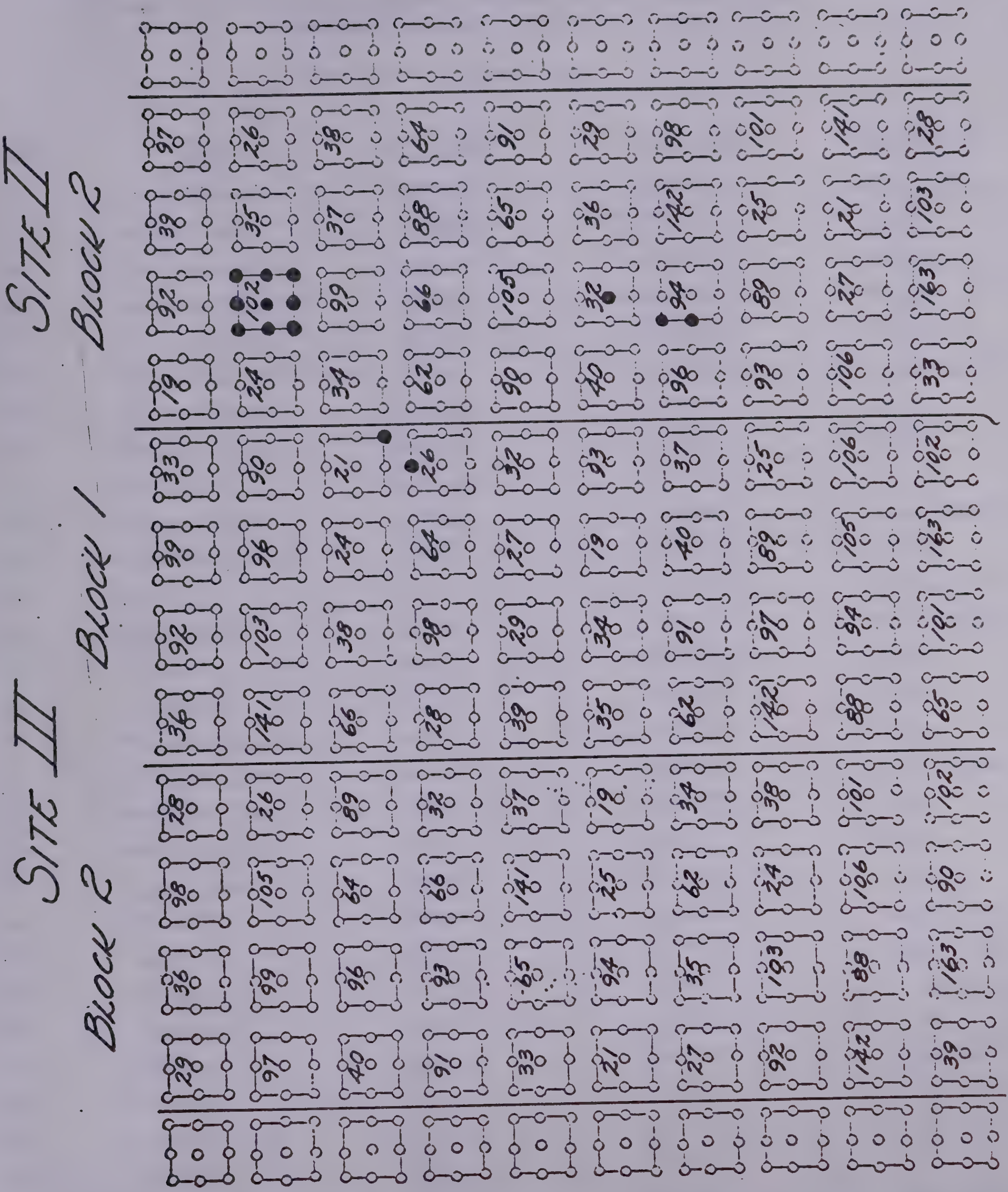
REGION No. _____ Name. WHITEHORSE, Y.T.

SITE No. _____ Name. TAKHINI

BLOCK No. _____ Date _______ Name _______

North Arrow





REMARKS. SITE II BLK 2 PLANTED 30, 31 MAY 1974 HOT & DRY, RAIN P.M. 30th

SITE III BLK 1 PLANTED 1 JUNE 1974 HOT & DRY

BLK 2 PLANTED 2 JUNE 1974 COOL, BROKEN CLOU

NOTE: FILLED CIRCLES INDICATE TREES MISSING FROM PLANTING STOC

FIG. 3b

TABLE 2

Pinus Contorta Provenances Planted at Watson Lake and Whitehorse, Yukon

May 1974 - June 1974

No.	NAME	LATITUDE	LONGITUDE	ELEVATION
19	Nithi River	54°03'	125°05'	3150-3200
21	Doris Lake	54°59'	126°33'	3150
24	Finlay Forks	55°57'	123°48'	2250
25	Hudson Hope	56°02'	122°05'	2380
26	Tower Lake	56°01'	120°37'	2600
27	Pink Mountain	57° 0	122°24'	3600-3700
28	Tetsa River	58°40'	124°10'	2500
29	Muncho Lake	59°03'	125°46'	2800
32	Carmacks	62°14'	136°18'	2200
33	Ethel Lake	63°18'	136°28'	2850-2900
34	Takhini River	60°41'	136°11'	2450
35	Atlin	59°48'	133°47'	2500-2675
36	Kinaskan	57°29'	130°13'	2650-2700
37	Cassiar	59°06'	129°44'	2600
38	Jackfish Creek	58°32'	122°42'	1500
39	Redwillow River	54°56'	120°15'	3130
40	McLeod Lake	54°49'	122°51'	2275-2300
62	McKale River	53°25'	120°20'	2300
64	Wendle Park	53°07'	121°30'	4200
65	Lynx Lake	53°39'	122°58'	2700
66	Stone Mtn.	58°39'	124°46'	3800 - 3900
88	Takutat	59°30'	139°10'	100- 200
89	Skagway	59°27'	135°15'	0- 200
90	Gustavus	58°27'	135°45'	20
91	Juneau	58°24'	134°42'	1300-1450
92	Douglas I.	58°20'	134°31'	100- 200
93	Beaver Lake	57°05'	135°11'	800- 900
94	Sitka	57°04'	135°21'	100
96	Thorne River	55°40'	132°45'	200- 250
97	Klawack River	55°34'	133°08'	100
98	Gravina I.	55°22'	131°42'	50- 100

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Page 2 - Table ~~I~~ 2, - Pinus Contorta Provenances Planted at Watson Lake and Whitehorse, Yukon - May 1974 - June 1974

No.	NAME	LATITUDE	LONGITUDE	ELEVATION
99	Annette	55°03'	131°35'	110
101	Kispiox	55°35'	127°45'	2000
102	Nass River	55°31'	128°35'	1000
103	Kalder L.	54°49'	124°16'	3100
105	Bowron River	53°54'	122°00'	2200
106	Wells	53°08'	121°33'	3600-3700
141	Hawk Hills	57°23'	117°33'	2350
142	Swan Hills	54°18'	116°35'	2700
163	Petitot River	59°54'	122°05'	1300

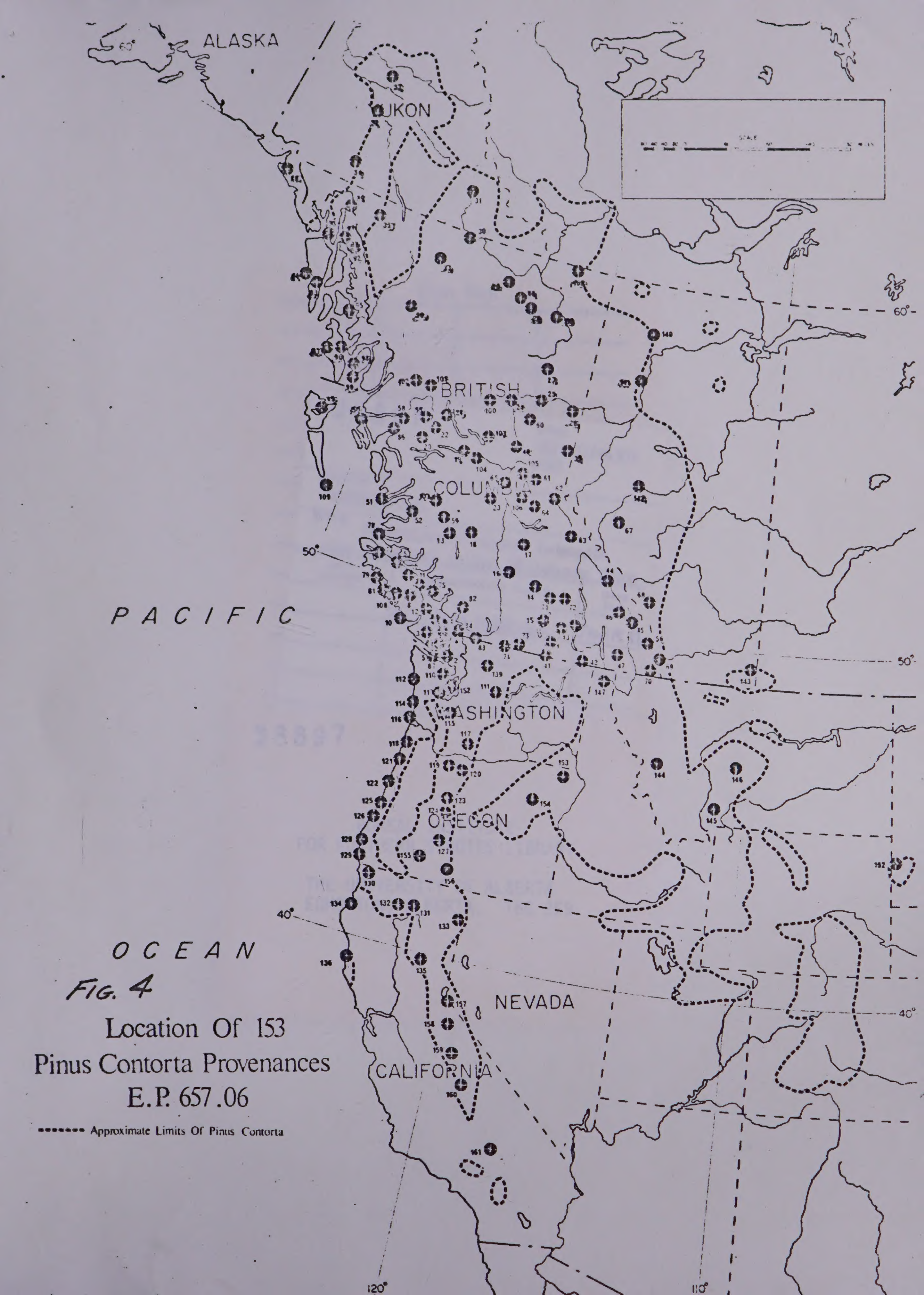

Fig. 4

Location Of 153
Pinus Contorta Provenances
E.P. 657.06

------- Approximate Limits Of Pinus Contorta

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